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ABSTRACT

This report views the effect of parent support in active participation in building children's inquiry skills. It is noted that at times a good learning experience developed for a youngster by a school is destroyed by lack of interest and support in the home. Parent attitudes towards the process of inquiry are seen as critical to the subsequent development of positive attitudes in the child. The total enrollment of first-grade children and their parents at an elementary school was used in the study. The parents and their children were divided into equal sizes of experimental and control groups. Parents in the experimental group were given training and materials to help their children in development of inquiry skills. Results of the study indicate that while most parents had a positive attitude towards the inquiry process, it is evident from the data that parents needed training in the development of inquiry skills in young children. (MP)

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THE EFFECT OF PARENT ATTITUDES ON THE PERFORMANCE OF INQUIRY SKILLS ON PUPILS IN GRADE ONE

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INTRODUCTION

According to Sigel and Saunders (1979), active participation in inquiry helps enrich the child's involvement with the physical and social realities. They state that question asking is critical because it "...(1) occurs in an interactional context, (2) employs a language, (3) allows for expanding the range and breadth of the child's approach."

Cognitive growth is enhanced through disciplined inquiry. Questions should be of a high quality in nature. They should create discrepancies, pose contradictions, and demand shifting of perspectives. These type questions are believed to have maximal impact on cognitive growth.

Jenkins (1961) states, "Sometimes the school develops a good learning experience for a youngster only to have it destroyed by lack of interest and support in the home."

Most parents exhibit a deep interest in the school and the educational needs of their children. Parents expect the school to provide knowledge and guidance as to specific ways for them to help their children develop necessary skills. Some persons believe that parent attitudes toward the inquiry process affect the development of inquiry skills in children.

Escalone (1951) states, "Most parents would like to rear their children well but many of them do not know how." Parent attitudes toward the process of inquiry are critical to the subsequent development of positive attitudes in the child. Parents must understand what can be expected of children and be aware of the fact that behavior is caused and can be changed.

Many times they are not adequately equipped, nor do they feel comfortable, in teaching inquiry skills.

Because of the uniqueness of children and the complexity of the thinking process, the teaching of inquiry skills is a highly individual and personal matter. Parents should help the child formulate questions that are important and meaningful to him and aid him in his quest for answers. This process should be introduced gradually so that there is always something fresh and new to capture the child's imagination, but never so much as to overwhelm or frustrate him.

In order to implement a successful home-based program for the teaching of inquiry skills, goals, methods, materials, and evaluations should be established by parents. Inquiry goals should be designated in terms of each child's needs and abilities.

With proper training, parents can create an environment which allows for exploration, creativity, and discovery. This training will give them the necessary skills to intervene and direct the child's development of inquiry skills and to evaluate the development of these skills. Sigel and Saunders (1979) state,

> Not only do we find differences among children who experience question asking engagements in a school setting, but also among children whose parents show preferences for question asking as an informal teaching strategy...in effect, formal (school) or informal (home) educational experiences weighted in favor of the questioning strategies seem to enhance cognitive development.

The concern of this study is to determine if the inquiry skills of children and parent attitude toward the inquiry method can be enhanced through a parental training program.

METHOD

The total enrollment of first grade children and their parents in an elementary school was used in the study. The subjects (child and parent) were randomly assigned to an experimental or a control group as they were registered for school. The entire population of parents was asked to participate in the study. Since only sixteen of the twenty-three parents of those eligible for the experimental group attended the parent training session, data were collected only on those parents and children. Sixteen of the twenty-four parents and their children from the control population were randomly selected as the control group.

Two female, black, first-grade teachers participated in the study. Each teacher holds a B.S. Degree, is certified under the regulations of the State of Mississippi with a class A certificate in elementary education, and has taught at least ten years at this elementary school. The teachers took no active part in the study.

PROCEDURE

A Likert Type Scale Pre Inquiry Observation Check List was used to evaluate the children during the first week of school. The same Inquiry Observation Check List was used as a post observation tool during the last week of September. This Check List contained seven items which were scaled from zero to three. The student score for the Check List was determined

by adding the ratings for the seven items. (See Appendix A for Check List.) A Likert Type Scale Pre Parent Attitudinal Survey was administered to the parents of the population as the subjects were registered for school. The same Parent Attitudinal Survey was given as a post questionnaire at the end of the parent training period. This Attitudinal Survey was made up of eleven questions, ten of which were used to determine parents' attitude toward the inquiry process and one question to find the parents' perception of their knowledge about the inquiry process. The Survey was administered to the parents of the subjects in the experimental and control groups prior to observation of the students.

All questions were ranked from 1 (strongly disagree) to 5 (strongly agree). A total sum of ranks was used to determine an attitude score of the ten questions used to assess attitude. The item used to seek information about the parents' perceived knowledge of the inquiry process was tabulated only to assess change and direction of change of knowledge perception. (See Appendix B for Survey.)

During the first week of school, all subjects in the experimental and control groups were brought into a room, four at a time, with a table of physical objects on it. The subjects were not given any instructions but were allowed to freely explore the objects on the table for a period of fifteen minutes. The researchers rated the subjects on the Likert Type Pre Inquiry Observation Check List based upon their interactions with the objects on the table.

After completion of the student observation, the parents in the experimental group were asked to come for training and to receive materials on the development of inquiry skills with their children. One two-hour training session was conducted by the researchers. The parents of the experimental group were then allowed a three-week period in which to work with their children at home on the development of inquiry skills. Then, a Post Attitudinal Survey was administered to the parents of the experimental and the control groups, and the children were observed and rated as on the Pre Inquiry Observation Check List.

RESULTS

The Mann-Whitney U-Test was used to test the difference in inquiry skill gains of the children of parents who were involved in the training program (experimental group) and the children of parents who were not involved in the training program (control group) as well as to test the difference in gains in attitude toward the value of the inquiry process between the experimental and control groups. The test indicated that children whose parents received training were significantly superior on inquiry skills ($U=59$, $P<.02$) (See Table I).

This test also indicated no significant difference in the attitude change of parents toward the value of the inquiry process between the group which had training and the group without training ($U=85$, $P>.05$). The mean scores for the pre test and post test are given in Table II. The mean scores

indicate that the attitude of parents of both groups were very positive and little positive gain could be expected. However, when a Chi Square analysis to determine if a significant association existed between group membership and attitude change, it was found that a significant association existed (X^2=4.167, df=1 p $<$.05) in that parents who received training indicated a significantly greater positive gain of perceived knowledge about the inquiry process (See Table III).

DISCUSSION

Results of the study indicate that most parents had a positive attitude toward the inquiry process prior to the training session. From the parent participation and the questions during the training session, it is evident that there is a need for parent training in the development of inquiry skills in young children. This opinion is supported in that the gain in the scores of the children whose parents were in this program gained significantly more in inquiry skills than the children who did not have the training. Although the parents all had a positive attitude, the data indicates a perceived lack of knowledge about the inquiry process of parents, and the training indicated that this perception could be changed in a positive direction. (See Table IV).

Although the data appears to support these results, the validity might be questioned. The validity of the instruments might be questioned although a panel of master, specialist, and doctoral students and university professors assisted the

the researchers in devising the Survey and the Check List. Also, the number of training sessions with parents and the limited amount of time that parents had to work with their children prior to the post observation might be limitations of the study.

TABLE I

MANN-WHITNEY U-TEST ANALYSIS OF THE DIFFERENCE IN MEAN SCORE GAINS IN INQUIRY SKILLS OF CHILDREN WHOSE PARENTS WERE INVOLVED IN A TRAINING PROGRAM (EXPERIMENTAL GROUP) AND CHILDREN OF PARENTS WHO WERE NOT INVOLVED (CONTROL GROUP)

Group	SS	Average Mean Gain	U	Probability
Experimental	16	3.56		
			59	*P $\leq$ .02
Control	16	.88		

*For significance at the .02 level with N_1=16, N_2=16 U $\leq$ 66.

TABLE II

MANN-WHITNEY U-TEST ANALYSIS OF THE DIFFERENCE IN MEAN GAINS IN ATTITUDE TOWARD THE VALUE OF THE INQUIRY PROCESS OF PARENTS WHO WERE INVOLVED (EXPERIMENTAL GROUP) AND PARENTS WHO WERE NOT INVOLVED (CONTROL GROUP)

Group	SS	Average Mean Gain	U	Probability
Experimental	16	**3.5		
			85	*P > .05
Control	16	.44		

*For significance at the .05 level with N_1=16, N_2=16 U $\leq$ 75.
**This large mean gain value was produced by only two very high gain scores.

TABLE III

CHI SQUARE ANALYSIS OF THE ASSOCIATION BETWEEN PARENT INVOLVEMENT AND CHANGE IN PERCEIVED KNOWLEDGE

Group	+ Gain	No Gain Or - Gain	X^2	df	Probability
Experimental	7/4	9/12			
			4.167	1	*P $<$ .05
Control	1/4	15/12			

*For significance at the .05 level with 1 df $X^2 \geq 3.841$.

NOTE: Yate's correction for continuity was utilized to obtain X^2.

TABLE IV

PRE TEST MEANS, POST TEST MEANS, AND MEAN GAIN SCORES OF PARENT ATTITUDE TOWARD THE VALUE OF THE INQUIRY PROCESS OF THE EXPERIMENTAL AND CONTROL GROUPS

Group	Pre Test Mean	Post Test Mean	Mean Gain
Experimental N_1=16	40.87	44.38	3.51
Control N_2=16	42.63	42.81	.18

APPENDICES

APPENDIX A

INQUIRY OBSERVATION CHECK LIST

	excellent	good	fair	poor
1. Infer (to combine or form elements into a whole)	3	2	1	0
2. Compare (discovering similarities or differences)	3	2	1	0
3. Describe (interprets physical objects)	3	2	1	0
4. Discover (to obtain from first time sight or knowledge)	3	2	1	0
5. Communicate (to converse or make known)	3	2	1	0
6. Observe (to inspect or to take note-to perceive)	3	2	1	0
7. Experiment (a trial or test to discover)	3	2	1	0

APPENDIX B

PARENT ATTITUDINAL SURVEY

	strongly disagree	mildly disagree	not sure	mildly agree	strongly agree
1. Parents should encourage children to ask questions.	1	2	3	4	5
2. The solution to many of our problems will come from minds that are trained to find answers to questions.	1	2	3	4	5
3. Inquiry leads to problem solving.	1	2	3	4	5
4. People do not ask enough questions about what is happening in the world today.	1	2	3	4	5
5. I am interested in learning more about inquiry skills.	1	2	3	4	5
6. Curiosity is a good trait in young children.	1	2	3	4	5
7. Asking questions and seeking the answers is good training for young children.	1	2	3	4	5
8. I encourage my child to be curious, to explore, and to question things.	1	2	3	4	5
9. I do not know very much about the inquiry process.	1	2	3	4	5
10. Inquiry skills are important and need to be taught.	1	2	3	4	5
11. I like for children to be curious and to question the world around them.	1	2	3	4	5

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